



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,784	07/10/2003	Kiyoshi Kimura	2018-744	1494
23117	7590	05/03/2006	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			SCHEUERMANN, DAVID W	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,784

Applicant(s)

KIMURA ET AL.

Examiner

David W. Scheuermann

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Pre-Appeal Conference

Prosecution has been reopened in response to the pre-appeal conference. Note the new ground(s) of rejection below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7, 8, 11 and 12 are rejected under 35 U.S.C. 103(a) as being anticipated by Igarashi, JP 06233483 in view of Takano et al., US 6566779 and in further view of Fujii, JP 09023629 A. Igarashi discloses:

A rotary electric machine comprising:

a stator (see figure 1) including a stator core having a plurality of teeth and stator coils mounted on the teeth, each said stator coil including a [bobbin that is fitted to one of the teeth and a phase coil wound around the bobbin each said bobbin including a bobbin terminal for connecting opposite ends of the phase coil]; and

Art Unit: 2834

a stator housing for accommodating said stator, said stator housing including an insert mold to be connectable to an outside electric device (inherent), each said stator terminal has a first contact portion (35);

[wherein each said bobbin terminal has a second contact portion in contact with the first contact portion when said stator is accommodated in said stator housing.]

Igarashi, JP 06233483 does not expressly disclose the bracketed material. Takano et al., US 6566779 discloses a bobbin 56, see figure 5, for the purpose of insulating the winding from the core. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a bobbin around the core of any stator tooth to insulate the winding of any motor including the motor of Igarashi, JP 06233483. Takano et al., US 6566779 teach use of a terminal in a receiving groove on the bobbin, see figures 1-3, for the purpose of enabling automatic assembling work, note abstract. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include a bobbin terminal for connecting opposite ends of the phase coil in the combination of Igarashi, JP 06233483 and Takano et al., US 6566779. One of ordinary skill in the art would have been motivated to do this to enable automatic assembly of the device.

Re claims 2 and 3, note terminal groove 3 shown in Fujii, JP 09023629 A.

As to claim 4, it is inherent that frame 16 holding terminals 32 and 38 is of a resinous non-conducting material to prevent an electrical short.

In re claim 7, note that the coils are grouped into groups as indicated by the three terminals 38.

Re claim 11, since the winding has two leads it would be obvious to provide a bobbin terminal for each lead end of the winding to enable current to flow through the winding in the combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A.

Re claim 12, note that the method is enabled by the structure formed by the combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A. In particular note the assembly steps shown in figure 5 of Takano et al., US 6566779.

Claims 5, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A in view of Batten et al., US 5770902. The combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A discloses the invention substantially as claimed as set forth in the rejection supra with respect to claim 1. The combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A does not expressly disclose; "...wherein said stator housing further comprises ... a metal reinforcement plate for supporting a ball bearing that rotatably supports an end of said rotor.", "...wherein said stator housing has a center bore for supporting said ball bearing, and wherein said center bore has an inside surface the diameter of which is formed with reference to one of an outside diameter and inside diameter of said stator.", or "... further comprising as sensor connector for connecting

Art Unit: 2834

said sensor terminals to an outside electric device, wherein said stator housing further included rotation angle detector and a plurality of sensor terminals embedded in said insert mold, and wherein said stator terminals and said sensor connector are integrated." Batten et al. disclose or suggest a motor termination board see figure 2, for the purpose of facilitating interconnection of control components and power components in a brushless DC motor (see abstract). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include a metal ball bearing reinforcement plate and control components (note angle sensors 26) in the stator housing of The combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A as taught by Batten et al. While Batten et al. do not expressly disclose that bearing insert 33 is for a ball bearing, Official Notice is taken that ball bearings used to support a motor shaft are well know in the motor art to reduce rotational friction while ruggedly supporting said motor shaft, and as such it would have been obvious to one of ordinary skill in the art to use ball bearings in the motor of The combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A and Batten et al. One of ordinary skill in the art would have been motivated to do this for facilitating interconnection of control components and power components.

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over The combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A in view of Katayama, US 5001379. The combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A teaches every aspect of the invention, except, "...wherein a pair of recesses is formed in each bobbin, each

Art Unit: 2834

for receiving a respective said bobbin terminal," or "...wherein each said bobbin terminal includes a projection projecting towards said first contact surface thereby to define second contact portion," or "...wherein the bobbin terminals and stator terminals are welded to each other at said contact portions thereof." Since the winding has two leads it would be obvious to provide a bobbin terminal for each lead end of the winding to enable current to flow through the winding in the combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A. Katayama, US 5001379 discloses a recess formed in a bobbin, for the purpose of supporting a bobbin terminal 12 having a connection portion 12c and an external connection portion 12f. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to replace lead terminals 15a and 15b of coil/bobbin assemblies of the combination of Igarashi, JP 06233483 , Takano et al., US 6566779 and Fujii, JP 09023629 A with terminal pins along with the supporting bobbin structure of Katayama, US 5001379. Furthermore it would have been obvious to solder or weld these terminal pins onto the stator contact portions to ensure a vibration-resistant connection and prevent corrosion from reducing the quality of the joint. One of ordinary skill in the art would have been motivated to do this to facilitate assembly and provide a stronger stator assembly.

Art Unit: 2834

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David W. Scheuermann whose telephone number is 571-272-2035. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

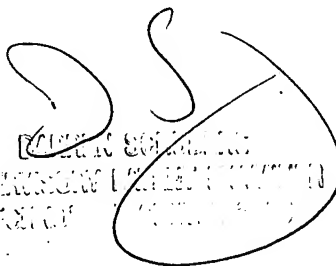
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached at (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272 2035.



dws
May 1, 2006



DAVID W. SCHEUERMAN
SUPERVISOR